

## **ABSTRACT OF THE INVENTION**

A system and method for proxying Dynamic Host Configuration Protocol (“DHCP”) network services for a network device, such as, a customer premise equipment entity, on a network device, such as, a cable modem, include creating a specialized proxy task for the customer premise equipment entity on the cable modem. One method of the present invention includes intercepting DHCP message flow between a customer premise equipment having a specialized proxy task created on the cable modem and a DHCP server selected by the customer premise equipment entity. The methods further include modifying lease time intervals prior to providing a routable network address lease to a customer premise equipment entity and renewing an initial lease for the customer premise equipment entity by a cable modem prior to expiration of the lease time interval provided by a DHCP server. The methods include using known protocols, such as, for example, the Dynamic Host Configuration Protocol.